

11/PR/TS

09/701991

526 Rec'd PCT/PTO 05 DEC 2000

1

Description:

A method for producing cardboard matches and corresponding cardboard matches, especially for books of matches

The invention relates to a method for producing cardboard matches according to the preamble of claim 1 and to corresponding cardboard matches, especially for books of matches.

Conventional cardboard matches for books of matches are cut during production from a layer of cardboard into a piece of cardboard, with cuts leading from one side into the piece of cardboard, so that strips are formed. The end sections of said strips are then alternately pressed apart and then provided with paraffin and an igniting composition. The igniting composition forms igniting heads which project from all sides over the circumference of the end sections and therefore prevent any complete bending back of the pressed-apart end sections of the strips. This leads to an only seemingly two-layer arrangement of matches.

From DE 296 14 075 U1 a hard box for cigarettes with friction strips is known which are arranged within the box lid and can be flipped out of the same. The hard box and the friction strips are cut or punched out of the same sheet and thus of the same material. The individual match strips are laterally connected to one another by way of perforations. An igniting composition is applied to the ends of the individual match strips. In order to avoid impairing the layout of the hard box when the friction strips are flipped out, the match strips as well as the side of the hard box which is underneath the same can be dyed and printed with the same motif.

It is the object of the present invention to develop a simplified method for producing cardboard matches and to thus provide respectively improved cardboard matches, especially for visually appealing books of matches.

This object is achieved by a method for producing cardboard matches according to the features of claim 1 and by respective cardboard matches according to the features of claim 15.

The production method for cardboard matches allows the production of cardboard matches for books of matches in a rapid manner and with few production steps. In this process, complex processes are omitted in particular, such as the mutual pressing apart of the strips prior to the coating with igniting composition in order to enable the provision of a sufficient number of match strips per piece of cardboard.

A cardboard match according to claim 15 offers, in combination with a simple arrangement, a large number of individual match strips on a single piece of cardboard. Moreover, it is composed of only one single part whose end sections are specially treated. A book of matches according to claim 27 with such a cardboard match can be manufactured rapidly and easily and offers in addition a large number of match strips in two real layers which are disposed behind one another. Said layers are disposed flat above one another and offer, depending on the respective arrangement of the individual match strips, a closed surface which is arranged in a visually appealing manner.

YES! AVAILABLE COPY

11/PR/TS 09/701991

Preferable embodiments are the subject matter of the subclaims. The arrangement of all strips on both sides saves processing steps and thus time during the punching. Moreover, an integral-piece of cardboard is provided which is easy to handle and can be processed in a rapid and easy manner. The ratio of 1:2 between the transversal and the longitudinal sides allows the folding of the piece of cardboard into a flat, square and thus appealing cardboard match. A ratio is preferred with slightly shorter longitudinal sides, because a book of matches with a cover sheet which also claims space in longitudinal direction can thus be produced in a square way.

The folding of a row of match strips behind the other leads to a true two-layer arrangement of the rows of matches with two smooth plane surfaces which are visually appealing and can be used as advertising surfaces. In the case of printed motifs which are arranged similarly behind one another the overall picture is not immediately destroyed when match strips are removed from the front row, so that the motif or advertising effect is maintained for a longer time.

If individual motifs are printed per match strip, an appealing picture is maintained until the last match strip is pulled out. The weakening zone allows a simple bending of a section of the cardboard part and in addition offers a defined bending line in order to thus simplify the alignment of pictures that come to lie behind one another. Various methods for coating the end sections with paraffin and igniting composition offer the applicability of various existing machines for processing or treating cardboard for the production of books of matches.

Particularly appealing and, as a result, effective in advertising are books of matches with match strips whose shape is adapted to the printed motifs. Motifs of objects are particularly suitable which are marketed by the advertising party. As a result of the fact that a plane surface area is available, the match strips can be shaped with a different width and can thus be adapted to the objects to be illustrated.

An embodiment for cardboard matches is explained below in closer detail by reference to the enclosed drawings, wherein:

Fig. 1A shows the front side of a cardboard match according to a first embodiment with printed match heads;

Fig. 1B shows the rear side of the cardboard match of fig. 1B, and

Fig. 2 shows in the upper half the front side and in the lower half the rear side of a cardboard match according to a second embodiment with projecting match heads and structured match strips.

As is shown in figs. 1A and 1B, individual pieces of cardboard 1 are cut or punched out of a sheet of cardboard, which pieces preferably are provided with a longitudinal shape, with the longitudinal sides or longitudinal edges 2 of a piece of cardboard 1 particularly being nearly twice as long as its transversal sides or transversal edges 3. Cuts 4 lead from both sides of the transversal edges 3 into the piece of cardboard 1, so that strips 5 can be formed on either side following a single punching step. The cuts 4 project towards the center of the piece of cardboard 1, with their length preferably being slightly more than one-third of the length of the longitudinal edges 2.

A weakening line 6 is integrated in the piece of cardboard 1, preferably approximately centrally between the transversal edges 3 and parallel to the same or to the longitudinal direction of the cuts 4. A weakening line 6 can be, for example, a line-shaped zone made of another material, a notch cut into the lower side, a pressed-in groove or, preferably, a perforation 6. A perforation 6 could be punched in especially during the punching of the piece of cardboard 1 from a sheet of cardboard.

The weakening line 6 facilitates the bending or folding of the section of the piece of cardboard 1, which is illustrated in the lower part of fig. 1, behind the upper section, which folding or bending is performed in a later step. Following the folding, the piece of cardboard 1 can then be glued into a book of matches in order to thus provide a real two-layer arrangement of superimposed strips.

The end sections 7 of the strips 5 are provided after the punching with paraffin and an igniting composition 9, with various processing sequences being possible for the treatment of the two sides of the piece of cardboard 1 with such end sections 7, which include such as explained below.

In order to provide the end sections 7 of the two sides with paraffin and an igniting composition 9 while they are still disposed in a plane, treatment on one side is considered, followed by the turning of the piece of cardboard 1 and the treatment of the other end sections 7 on the other side. This is considered in particular when dipping baths are used.

Alternatively, the end sections 7 can be sprayed or brushed over with respective applying devices with paraffin and/or igniting composition 9. The turning of the piece of cardboard 1 can be omitted in this case if the applying device is provided with respectively spaced auxiliary application means. A further example for a coating method comprises the folding of the lower section of the piece of cardboard 1 along the weakening line 6 behind its upper section about an angle of preferably more than 90°, but less than 180°. Thereafter the end sections 7 of both sides of the piece of cardboard 1 can be simultaneously coated or dipped into a coating bath.

Depending on the material of the igniting mass 9 and the method of application, the igniting composition 9 forms match heads which rest in a flat manner on the strips, as is illustrated in figs. 1A and 1B, or, as is shown in fig. 2, match heads can be formed which project on all sides beyond the circumference of the end sections 7. The igniting mass 9 can be enriched with dyes, so that the match heads on a piece of cardboard 1 can be adapted to the color design of a book of matches for example. In particular, adjacent match heads however can be provided with different igniting compositions 9.

During the punching of the piece of cardboard 1 it is possible to arrange the cuts 4 and/or cutouts 11 in such a way that the individual strips 5 are provided with different widths or even with different shapes, as is shown in fig. 2. It is thus possible, for example, to design books of matches for advertising purposes for a drugstore and perfume shop which comprise match strips for example in the shape of a lipstick 12, a perfume bottle 13 or a rouge brush 14. Notice must be taken in the dimensioning of the cutouts 11 that the end sections 7 with the match heads are not weakened to such an extent that they will break or tear off during ignition. Parameters to be

considered are in particular the strength and type of material from which pieces of cardboard 1 are punched. Concerning the format of the piece of cardboard 1 per se or the individual match strips 5 there are no fixed defining values. The ratio of length to width can therefore be chosen differently for example if no square-shaped books of matches are to be produced.

A particular advantage is the possibility of enabling printing on a wide surface area with advertisements or motifs 15. Although the printing can also occur after the punching of the piece of cardboard 1, the printing preferably occurs prior to the punching. Since after the folding of the lower section of the piece of cardboard 1 the actual rear side of the folded and bent-up section faces forwardly, its front side is printed when the upper section is printed and its rear side when the lower side is printed, as is illustrated in figs. 1A and 1B.

In the case of flat match heads which do not project over laterally adjacent match strips 5 (figs. 1A, 1B) or in the case of protruding match heads on match strips 5 which taper on the end section (fig. 2), a flat surface is also maintained after the coating. This not only enables a printing with narrow motifs 15 (match strip by match strip), but also the printing of large-area motifs 15 which extend over several match strips.